

Appendix 3

Bioretention Plant List

The following table includes both native and non-native plant species commonly available in the Puget Sound region and suitable for bioretention cells and swales. Individual site characteristics and goals may exclude some species or require modifications or additions to plant suggestions provided here.

Bioretention cells and swales generally feature three planting zones characterized by soil moisture and periodic inundation.

Zone 1: Area of periodic or frequent standing or flowing water. Zone 1 plants will also tolerate the seasonally dry periods of summer in the Pacific Northwest without extra watering and may also be applicable in zone 2 or 3.

Zone 2: Periodically moist or saturated during larger storms. Plants listed under Zone 2 will also be applicable in Zone 3.

Zone 3: Dry soils, infrequently subject to inundation or saturation. This area can be used to transition or blend with the existing landscape.

Special Considerations

Drought tolerance—Several plants included on the list do not tolerate dry conditions. For these plants, irrigation will be necessary during dry periods. In general, all plantings require watering during dry periods for the first two or three years after planting until established.

Placement of large trees—Consider height, spread, and extent of roots at maturity. Use caution in plant selection for areas with under-drain pipes or other structures. Lower limbs of plants placed close to a road or driveway may cause problems with visibility or safety. See Appendix 1: Street Trees for more information on tree selection and placement suggestions.

Phytoremediation—Appendix 5 includes a list of plants that have been studied for their ability to filter, absorb, and/or degrade specific contaminants. While most of these plants are not included in the following lists, varieties of some of the species known for phytoremediation are listed.

► ZONE 1

* denotes native species

TREES

SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE/ SPREAD	TIME OF BLOOM	COMMENTS
<i>Alnus rubra</i> * Red alder	Sun/partial shade	30-120 feet/ 25 ft. spread		Prefers moist, rich soils, highly adaptable, drought tolerant; nitrogen fixer; rapid growing, relatively short-lived (60-90 years)
<i>Fraxinus latifolia</i> * Oregon ash	Sun/partial shade	40-80 feet/ 30 ft. spread		Moist, saturated or ponded soils; flood tolerant; small green-white flowers
<i>Malus fusca</i> * Pacific crabapple	Sun/partial shade	To 40 feet/ 35 ft. spread	Spring	Tolerant of prolonged soil saturation; produces fruit (do not plant near public walkways)
<i>Salix lucida</i> * Pacific willow	Sun	40-60 feet/ 30 ft. spread		Wet soils; tolerates seasonal flooding; should not be planted in areas near pavement or underground structures

SHRUBS

SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Cornus sericea</i> * Red-osier dogwood Red-twig dogwood	Sun/partial shade	To 15 feet	May - June	Prefers wet to moist organically rich soils, but is adaptable; tolerates seasonal flooding; small white flowers; berrylike fruits
<i>Cornus sericea</i> 'Kelsey' Dwarf dogwood	Sun	To 1.5 feet	June - August	Prefers wet to moist organically rich soils, but is adaptable; small white flowers; berrylike fruit; low growing, compact form; good ground cover
<i>Cornus sericea</i> 'Flaviramea' Yellow dogwood	Sun/partial shade	6-8 feet	May - June	Prefers wet to moist organically rich soils, but is adaptable; easily transplanted and grown; small, white flowers; yellow stems and reddish, purple fall color
<i>Cornus sericea</i> 'Isanti' Isanti dogwood	Sun/partial shade	4-5 feet	May - June	Prefers wet to moist organically rich soils, but is adaptable; deciduous shrub; tiny white flowers; red stems; purple fall color
<i>Lonicera involucrata</i> * Black twinberry	Partial shade/shade	2-8 feet	April - May	Moist soils; prefers loamy soils; tolerant of shallow flooding; yellow, tubular flowers attract hummingbirds
<i>Myrica californica</i> * Pacific wax myrtle	Sun/partial shade	To 30 feet	May - June	Evergreen shrub preferring moist soils; inconspicuous spring flowers; drought tolerant; if drought tolerance is not an issue try the smaller Washington native, <i>Myrica gale</i> *
<i>Physocarpus capitatus</i> * Pacific ninebark	Sun/partial shade	6-13 feet	May - June	Moist or dry soils; drought tolerant; snowball shaped; white flowers; seeds persist into winter
<i>Rosa pisocarpa</i> * Clustered wild rose	Sun/partial shade	6-8 feet	May - July	Moist soils, tolerates seasonal flooding but also tolerant of dry conditions; pink clustered flowers; fruits persist
<i>Salix purpurea</i> 'Nana' Dwarf Arctic willow	Sun/partial shade	3-5 feet		Grows well in poor soils; moderately drought tolerant; small yellow flowers in the fall
<i>Spiraea douglasii</i> * Douglas spirea Steeplebush	Sun/partial shade	4-7 feet		Moist or dry, to seasonally inundated soils; spikes of small, pink flower clusters

► ZONE 1

EMERGENTS				
SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Carex obnupta</i> * Slough sedge	Sun/partial shade	1-5 feet		Moist to seasonally saturated soils; shiny foliage; excellent soil binder; drought tolerant
<i>Carex stipata</i> * Sawbeak sedge	Partial shade	10 inches-3 feet		Wet soils; excellent soil binder
<i>Juncus effusus</i> * Common rush	Sun/partial shade	1-2 feet	Summer	Wet soils; evergreen perennial; hardy and adaptable; drought tolerant; small, non-showy flowers
<i>Juncus ensifolius</i> * Daggerleaf rush	Sun	12-18 inches		Wet soils; shallow water; excellent soil binder
<i>Juncus tenuis</i> * Slender rush	Sun	.5-2.5 feet		Moist soils; tufted perennial
<i>Scirpus acutus</i> * Hardstem bulrush	Sun	4-8 feet		Wet soils; favors prolonged inundation; excellent soil binder
<i>Scirpus microcarpus</i> * Small-fruited bulrush	Sun/shade	2-4 feet		Wet soils; tolerates prolonged inundation; good soil binder; drought tolerant

► ZONE 2

TREES				
SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Acer truncatum</i> Pacific sunset maple	Sun	To 25 feet/ 20 ft. spread		Prefers moist, well-drained soils, but drought tolerant; very cold hardy; deciduous tree with moderate growth rate
<i>Amelanchier alnifolia</i> * Western serviceberry	Sun/partial shade	10-20 feet/ 25 ft. spread	April - May	Moist to dry, well-drained soils; drought tolerant; large white flowers; purple to black berries; deciduous
<i>Corylus cornuta</i> * Beaked hazelnut	Sun/partial shade	20-30 feet/ 15 ft. spread	April - May	Moist, well-drained soils; edible nuts; intolerant of saturated soils; catkins throughout winter add interest; deciduous
<i>Crataegus douglasii</i> * Black hawthorn	Sun/partial shade	3-30 feet/ 25 ft. spread	Spring	Moist to dry, well drained, gravelly soils; small white flowers, black berries; 1" spines; forms thickets; deciduous
<i>Fraxinus oxycarpa</i> Raywood ash	Sun	25-50 feet/ 25 ft. spread	Spring	Drought tolerant; grows in varying soil types; deciduous; can take extreme temperatures; does not tolerate constant wind or fog; resists pests and disease better than other non-native ashes; inconspicuous flowers
<i>Rhamnus purshiana</i> * Cascara sagrada	Sun/shade	20-40 feet/ 25 ft. spread		Moist to fairly dry soils; small greenish-yellow flowers; deciduous; sensitive to air pollution; yellow fall color
<i>Salix scouleriana</i> * Scouler willow	Sun/partial shade	6-40 feet/ 15 ft. spread		Moist to dry soils; drought tolerant; deciduous tree; do not plant near paved surfaces or underground structures
<i>Salix sitchensis</i> * Sitka willow	Sun/partial shade	3-26 feet/ 25 ft. spread		Moist soils; tolerates seasonal flooding; deciduous tree; do not plant near paved surfaces or underground structures
<i>Thuja plicata</i> * Western red cedar	Partial shade/shade	200 feet+/ 60 ft. spread		Moist to swampy soils; tolerates seasonal flooding and saturated soils; long-lived; prefers shade while young

► ZONE 2

SHRUBS - Deciduous

SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Acer circinatum</i> * Vine maple	Filtered sun/shade	To 25 feet	Spring	Dry to moist soils; tolerant of shade and clay soils; excellent soil binder; beautiful fall color
<i>Hamamelis intermedia</i> Diane Diane witchhazel	Sun/partial shade	10-20 feet/ 10 ft. spread	January - March	Moist, fertile, acidic soil; showy fall color – yellow to yellow-orange; long-lasting, slightly fragrant, coppery-red flowers; not drought tolerant; may require watering in dry season
<i>Oemleria cerasiformis</i> * Indian plum/Osoberry	Sun/partial shade	5-16 feet	February - March	Moist to dry soils; prefers shade; tolerates fluctuating water table
<i>Philadelphus x lemoinei</i> 'Belle Etoile' Mock-orange	Sun/partial shade	5-6 feet	May - June	Prefers moist, well-drained soils, high in organic matter, but soil and pH adaptable; easily transplanted and established; fragrant, large white flowers, tinged red at the base; other cultivars available
<i>Ribes lacustre</i> * Black swamp gooseberry	Partial shade	1.5–3 feet		Moist soils; deciduous shrub; reddish flowers in drooping clusters; dark purple berries; <i>R. divaricatum</i> * (Wild gooseberry) grows to 5 feet and is also an option; attracts butterflies, but is very thorny
<i>Rosa nutkana</i> * Nootka rose	Sun/partial shade	6-10 feet	April - June	Moist to fairly dry soils; tolerates inundation and saturated soils; aggressive spreader; fruits persist; less thorny than <i>R. rugosa</i>
<i>Rosa rugosa</i> Rugosa rose	Sun	To 8 feet		Drought resistant; hardy, vigorous and aggressive; highly prickly; fragrant white to purple flowers; fruits persist
<i>Rubus parviflorus</i> * Thimbleberry	Sun/partial shade	4-10 feet	May - June	Moist to dry soils; white flowers; red berries; makes thickets and spreads easily
<i>Rubus spectabilis</i> * Salmonberry	Partial sun/shade	5-10 feet	February - April	Prefers moist, wet soils; good soil binder; magenta flowers; yellow/orange fruit; early nectar source for hummingbirds; makes thickets
<i>Sambucus racemosa</i> * Red elderberry	Partial sun/partial shade	To 20 feet	April - May	Moist to dry soils; small white flowers; bright red berries; vase shaped; pithy stems lead to "messy" form – prune for tidiness
<i>Symphoricarpos albus</i> * Snowberry	Sun/shade	2-6 feet		Wet to dry soils, clay to sand; excellent soil binder; drought and urban air tolerant; provides good erosion control; spreads well in sun; white berries; flowers attract hummingbirds
<i>Vaccinium parvifolium</i> * Red huckleberry	Partial shade/shade	4-10 feet		Slightly moist to dry soils; prefers loamy, acid soils or rotting wood; tolerant of dry, shaded conditions; red fruit; tricky to transplant

► ZONE 2

HERBACEOUS				
SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Aquilegia formosa</i> * Western columbine	Sun/partial shade	1-3 feet	Spring	Moist soils of varying quality; tolerant of seasonal flooding; red and yellow flowers attract hummingbirds and butterflies
<i>Asarum caudatum</i> * Wild ginger	Partial shade/shade	To 10 inches	Mid spring	Moist organic soils; heart-shaped leaves; reddish-brown flowers
<i>Aster chilensis</i> * Common California aster	Sun	1.5 – 3 feet	June - September	Moist soils; white to purple flowers
<i>Aster subspicatus</i> * Douglas aster	Sun	.5 – 2.5 feet	June - September	Moist soils; blue to purple flowers
<i>Camassia quamash</i> * Common camas	Sun/partial shade	To 2.5 feet	May - June	Moist to dry soils; lots of watering needed to establish; loose clusters of deep blue flowers
<i>Camassia leichtlinii</i> Giant camas		2-4 feet	May - June	Moist to dry soils; lots of watering to establish; large clusters of white, blue or greenish-yellow flowers
<i>Iris douglasiana</i> * Pacific coast iris	Sun/partial shade	1-2 feet	Spring	Tolerates many soils; withstands summer drought and seasonal flooding; white, yellow, blue, reddish purple flowers; fast growing; velvety purple flowers; vigorous
<i>Iris foetidissima</i> Gladwin iris	Sun/partial shade	1-2 feet	May	Moist to dry, well-drained soils; pale lilac flower; also called Stinking Iris
<i>Juncus tenuis</i> * Slender rush	Sun	6 inches – 2.5 feet		Moist soils; yellow flowers
<i>Iris sibirica</i> Siberian Iris	Sun	1-2.5 feet	Late spring – early summer	Moist soils; deep blue, purple to white flowers
<i>Tellima grandiflora</i> * Fringecup	Partial sun/shade	1-3 feet	March - June	Perennial preferring moist soils; yellowish-green to pink flowers
<i>Tiarella trifoliata</i> * Foamflower	Partial sun/shade	To 1 foot	Early - mid summer	Moist soils; perennial with some drought tolerance after established; can form dense colonies; white flowers
<i>Tolmiea menziesii</i> * Youth-on-age/Piggy-back plant	Partial shade/shade	1-2 feet	April - August	Moist soils; brownish-purple flowers; also makes an effective groundcover
<i>Viola species</i> * Violets	Partial shade/shade	6-12 inches	Late spring – early summer	Moist soils; yellow to blue flowers

► ZONE 3

TREES

SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Arbutus unedo</i> Strawberry tree	Sun/partial shade	8-35 feet/ 8-20 ft. spread	November - December	Tolerant of extremes; tolerant of urban/ industrial pollution; white or greenish white flowers
<i>Calocedrus decurrens</i> * Incense cedar	Sun	75-90 feet/ 12 ft. spread		Tolerant of poor soils; drought tolerant after established; fragrant evergreen with a narrow growth habit; slow growing
<i>Chamaecyparis obtusa</i> Hinoki false cypress	Sun/partial shade	40-50 feet/ 15-30 ft. spread		Moist, loamy, well-drained soils; very slow growing; prefers sun, but tolerates shade; does not transplant well or do well in alkaline soils. Note there are many alternative varieties of false cypress of varying sizes and forms from which to choose
<i>Cornus</i> spp. Dogwood	Sun/partial shade	20-30 feet/ 30 ft. spread	May	Reliable flowering trees with attractive foliage and flowers; may need watering in dry season; try <i>C. florida</i> (Eastern dogwood), or <i>C. nuttallii</i> * (Pacific dogwood) or hybrid 'Eddie's White Wonder'. Also, <i>C. kousa</i> for small tree/ shrub which is resistant to anthracnose
<i>Pinus mugo</i> Swiss mountain pine	Sun/partial shade	15-20 feet/ 25-30 ft. spread		Prefers well-drained soil; slow growing, broadly spreading, bushy tree; hardy evergreen
<i>Pinus thunbergiana</i> Japanese black pine	Sun	To 100 feet/ 40 ft. spread		Dry to moist soils; hardy; fast growing
<i>Prunus emarginata</i> * Bitter cherry	Sun/partial shade	20-50 feet/ 20 ft. spread	May - June	Dry or moist soils; intolerant of full shade; bright red cherries are attractive to birds; roots spread extensively
<i>Prunus virginiana</i> Choke cherry		15-25 feet/ 15-20 ft. spread	Late spring - Early summer	Dry or moist soils; deep rooting; attractive white fragrant flowers; good fall color
<i>Pseudotsuga menziesii</i> * Douglas-fir	Sun	100-250 feet/ 50-60 ft. spread		Does best in deep, moist soils; evergreen conifer with medium to fast rate of growth; provides a nice canopy, but potential height will restrict placement
<i>Quercus garryana</i> * Oregon white oak	Sun	To 75 feet		Dry to moist, well-drained soils; slow growing; acorns

SHRUBS

SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Holodiscus discolor</i> * Oceanspray	Sun/partial shade	To 15 feet	June - July	Dry to moist soils; drought tolerant; white to cream flowers; good soil binder
<i>Mahonia aquifolium</i> * Tall Oregon grape	Sun/partial shade	6-10 feet	March - April	Dry to moist soils; drought resistant; evergreen; blue-black fruit; bright yellow flowers; 'Compacta' form averages 2 feet tall; great low screening barrier
<i>Philadelphus lewisii</i> * Mock-orange	Sun/partial shade	5-10 feet	June - July	Adapts to rich moist soils or dry rocky soils; drought tolerant; fragrant flowers

► ZONE 3

SHRUBS

SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Pinus mugo pumilio</i> Mugho pine	Sun	3-5 feet/ 4-6 ft. spread		Adapts to most soils; slow growing and very hardy; newer additions with trademark names such as 'Slo-Grow' or 'Lo-Mound' are also available
<i>Potentilla fruticosa</i> Shrubby cinquefoil	Sun	To 4 feet	May - September	Moist to dry soils; several cultivars available with varying foliage and flower hues; try 'Tangerine' or 'Moonlight'
<i>Ribes sanguineum</i> * Red-flowering currant	Sun/partial shade	8-12 feet	March - April	Prefers dry soils; drought tolerant; white to deep-red flowers attract hummingbirds; dark-blue to black berries; thornless
<i>Rosa gymnocarpa</i> * Baldhip rose	Partial shade	To 6 feet	May - July	Dry or moist soils; drought tolerant; small pink to rose flowers

SHRUBS-Evergreen

SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Abelia x grandiflora</i> Glossy abelia	Partial Sun/Partial shade	To 8 feet/ 5 foot spread	Summer	Prefers moist, well-drained soils, but drought tolerant; white or faintly pink flowers
<i>Arbutus unedo</i> 'Compacta' Compact strawberry tree	Sun/partial shade	To 10 feet	Fall	Prefers well drained soils; tolerant of poor soils; good in climate extremes; white to greenish-white flowers; striking red-orange fruit
<i>Cistus purpureus</i> Orchid rockrose	Sun	To 4 feet	June - July	Moist to dry well-drained soils; drought resistant; fast growing; reddish purple flowers
<i>Cistus salvifolius</i> White rockrose	Sun	2-3 feet/ 6 ft spread	Late spring	Moist to dry well-drained soils preferred, but can tolerate poor soils; tolerant of windy conditions and drought; white flowers
<i>Escallonia x exoniensis</i> 'fradesii' Pink Princess	Sun/partial sun	5-6 feet	Spring - Fall	Tolerant of varying soils; drought tolerant when established; pink to rose colored flowers; good hedge or border plant; attracts butterflies
<i>Osmanthus delavayi</i> Delavay Osmanthus	Sun/partial shade	4-6 feet	March - May	Tolerant of a broad range of soils; attractive foliage and clusters of white fragrant flowers; slow growing
<i>Osmanthus x burkwoodii</i> Devil wood	Sun/partial shade	4-6 feet	March - April	Drought tolerant once established; masses of small, white fragrant flowers
<i>Rhododendron</i> 'PJM' hybrids	Sun/partial shade	To 4 feet	Mid - late April	Moist to fairly dry soils; well drained organic soil; lavender to pink flowers
<i>Stranvaesia davidiana</i>	Sun	6-20 feet	June	Moist soils; white flowers in clusters; showy red berries
<i>Stranvaesia davidiana undulata</i>	Sun	To 5 feet	June	Moist soils; lower growing irregularly shaped shrub; great screening plant
<i>Vaccinium ovatum</i> * Evergreen huckleberry	Partial shade/ shade	3-15 feet	March	Moist to slightly dry soils; small pinkish-white flowers; berries in August

► ZONE 3

GROUND COVER -

Evergreen

SPECIES/

COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Arctostaphylos uva-ursi</i> * Kinnikinnik	Sun/partial shade		April - June	Prefers sandy/rocky, well-drained soils; flowers pinkish-white; bright red berries; slow to establish; plant closely for good results
<i>Gaultheria shallon</i> * Salal	Partial shade/ shade	3-7 feet	March - June	Dry and moist soils; white or pinkish flowers; reddish-blue to dark-purple fruit
<i>Fragaria chiloensis</i> * Wild/Coastal strawberry	Sun/partial shade	10 inches	Spring	Sandy well drained soils; flowers white; small hairy strawberries; evergreen; aggressive spreader
<i>Helianthemum nummularium</i> Sunrose	Sun	To 2 feet/ 2 ft. spread	May - July	Prefers well-drained soils, but will tolerate various soils; low-growing, woody sub shrub; many varieties are available with flowers in salmon, pink, red, yellow and golden colors
<i>Lavandula angustifolia</i> Lavender	Sun/partial shade	To 1.5 feet	June - August	Adaptable to various soils; blue, lavender, pink to white flowers, semi-evergreen aromatic perennial
<i>Mahonia nervosa</i> * Cascade Oregon grape/Dull Oregon grape	Partial shade/ shade	To 2 feet	April - June	Dry to moist soils; drought resistant; evergreen; yellow flowers; blue berries
<i>Mahonia repens</i> Creeping mahonia	Sun/partial shade	3 feet	April - June	Dry to moist soils; drought resistant; yellow flowers; blue berries; native of Eastern Washington
<i>Penstemon davidsonii</i> * Davidson's penstemon	Sun	To 3 inches	June - August	Low growing evergreen perennial; prefers well-drained soils; drought tolerant; blue to purple flowers

PERENNIALS & ORNAMENTAL GRASSES

SPECIES/

COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Achillea millefolium</i> * Western yarrow	Sun	4 inches - 2.5 feet	June - September	Dry to moist, well-drained soils; white to pink/reddish flowers; many other yarrows are also available
<i>Anaphalis margaritacea</i> Pearly everlasting	Sun/partial shade	To 18 inches		Drought tolerant perennial; spreads quickly; attracts butterflies
<i>Bromus carinatus</i> * Native California brome	Sun/partial shade	3-5 feet		Dry to moist soils; tolerates seasonal saturation
<i>Carex buchannii</i> Leather leaf sedge	Sun/partial shade	1-3 feet		Prefers well-drained soils; copper-colored foliage; perennial clumping grass; tolerant of a wide range of soils; inconspicuous flowers
<i>Carex comans</i> 'Frosty curls' New Zealand hair sedge	Sun/partial shade	1-2 feet	June - August	Prefers moist soils; finely textured and light green; compact, clumping perennial grass; drought tolerant when established; inconspicuous flowers

PERENNIALS & ORNAMENTAL GRASSES

SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Coreopsis</i> spp.	Sun	1-3 feet		Dry to moist soils; drought tolerant; seeds attract birds; annual and perennial varieties; excellent cut flowers
<i>Echinacea purpurea</i> Purple coneflower	Sun	4-5 feet		Prefers well drained soils; hardy perennial; may need occasional watering in dry months
<i>Elymus glaucus</i> * Blue wildrye	Sun/partial shade	1.5-5 feet		Dry to moist soils; shade tolerant; rapid developing, but short lived (1-3 years); not good lawn grass
<i>Dicentra formosa</i> * Pacific bleeding-heart	Sun/shade	6-20 inches	Early spring - early summer	Moist, rich soils; heart-shaped flowers
<i>Erigeron speciosus</i> * Showy fleabane	Sun/partial shade	To 2 feet	Summer	Moist to dry soils; dark violet or lavender blooms; fibrous roots
<i>Festuca ovina</i> 'Glaucua' Blue fescue	Sun/partial shade	To 10 inches	May - June	Prefers moist, well-drained soils; blue-green evergreen grass; drought tolerant; shearing will stimulate new growth
<i>Festuca idahoensis</i> * Idaho fescue	Sun/partial shade	To 1 foot		Bluish-green bunching perennial grass; drought tolerant
<i>Fragaria vesca</i> * Wood strawberry	Partial shade	To 10 inches	Late spring - early summer	Dry to moist soils; white flowers
<i>Gaura lindheimeri</i> Gaura	Sun	2.5-4 feet		Perennial; fairly drought tolerant and adaptable to varying soil types; long blooming period
<i>Geum macrophyllum</i> * Large-leaved avens	Sun/partial shade	To 3 feet	Spring	Moist, well-drained soil; bright yellow flowers; other <i>Geum</i> cultivars available, some which may require supplemental watering
<i>Geranium maculatum</i> Spotted geranium	Sun/shade	To 1.5 feet	July	Moist, well-drained soils; low perennial; pale pink, blue to purple flowers
<i>Geranium sanguineum</i> Cranesbill	Sun/partial shade	To 1.5 feet	May - August	Moist soils; deep purple almost crimson flowers
<i>Helichrysum italicum</i> Curry Plant	Sun	To 2 feet	Summer	Moist or dry soils; hardy evergreen perennial; a good companion to lavender; bright yellow flowers; fragrant
<i>Helictotrichon sempervirens</i> Blue oat grass	Sun/partial shade	1-1.5 feet	June - August	Tolerant of a variety of soil types but prefers well-drained soil; clumping bright blue evergreen grass; bluish white flowers
<i>Hemerocallis fulva</i> Day lilies	Sun/partial shade	1-4 feet	Summer	Tolerant of a variety of soil types; easy to grow and tolerant of neglect; hardy perennial; entire plant is edible
<i>Heuchera americana</i> Coral bells (alumroot)	Sun/partial shade	1-2 feet	June - August	Moist to dry, well-drained soils; never wet; easily transplantable perennial; red, greenish-white flowers; may need supplemental watering in dry season
<i>Heuchera micrantha</i> 'Palace purple' (alumroot)	Sun/partial shade	1-2 feet	June - August	Moist, well-drained soils; bronze to purple foliage in shade; small, yellowish-white flowers; perennial, evergreen; a number of other species and varieties are available. Try <i>H. sanguinea</i> for bright red flowers
<i>Lupinus</i> * spp. Lupines	Sun	3-5 feet	March - September	Moist to dry soils; various native varieties; blue to purple, violet to white flowers; both native and non-native varieties

PERENNIALS & ORNAMENTAL GRASSES

SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Lupinus bicolor</i> * Two-color lupine	Sun	4 inches- 1.5 feet	Spring	Dry gravelly soils; small-flowered; annual
<i>Lupinus latifolius</i> * Broadleaf lupine	Sun	To 1 foot	June - August	Dry to moist soils; perennial; bushy herb; bluish flowers
<i>Lupinus polyphyllus</i> * Large-leaved lupine	Sun	To 3 feet	Spring - summer	Dry to moist, sandy to gravelly soils; perennial
<i>Maianthemum dilatatum</i> * False lily-of-the-valley	Partial shade/ shade	3-12 inches	Spring	Prefers moist soils; small, white flowers; light-green to red berries
<i>Pennisetum alopecuroides</i> Fountain grass	Sun/partial shade	1-2 feet	August - September	Moist, well-drained soils; tolerant of many soil types; clump-forming grasses. A number of varieties are available in different heights and bloom times. Try <i>P. caudatum</i> (White-flowering fountain grass) and <i>P. alopecuroides</i> cultivars 'Hameln' and 'Little Bunny' (Dwarf fountain grass)
<i>Pennisetum orientale</i> Oriental fountain grass	Sun/partial shade	1-3 feet	June - October	Prefers moist, well-drained soils; somewhat drought tolerant; small clumping, blooming grass, showy pink flowers; fountain grasses will benefit from annual shearing in late winter/early spring, but not required
<i>Penstemon fruticosus</i> Shrubby penstemon	Sun	8-10 inches	May	Prefers well-drained soils; evergreen perennial; drought tolerant; violet-blue flowers 1" long attract hummingbirds
<i>Polystichum munitum</i> * Swordfern	Partial shade/ Deep shade	2-4 feet		Prefers moist, rich soil conditions, but drought tolerant; large evergreen fern
<i>Potentilla gracilis</i> * Graceful cinquefoil	Sun	1-2 feet	July	Moist to dry soils; yellow flowers
<i>Rudbeckia hirta</i> Black-eyed susan	Sun/partial shade	3-4 feet	Summer	Moist to dry soils; showy flowers, hardy and easy to grow; several other varieties are available
<i>Smilacina racemosa</i> * False Solomon's seal	Partial sun/shade	1-3 feet	April - May	Moist soils; creamy white flowers; red berries
<i>Solidago canadensis</i> * Canadian goldenrod	Sun/partial shade	1-2 feet	Late summer - early fall	Dry to moist soils; yellow flowers

Bog Garden Plants

A bog garden presents a unique design option for managing stormwater on site. A lined depression filled with an organic soil mix and wetland vegetation can be an attractive method for promoting evaporation and transpiration of collected runoff. A functioning bog garden generally displays no standing water, but soils are saturated much of the time, necessitating facultative wetland plant selections.

To select plant species appropriate for a bog garden refer to those listed in this appendix, **Zone 1**, as well as those found in the following table. The list below includes additional native and non-native plant species (not listed in the bioretention plant list) that have been successfully applied in Pacific Northwest bog gardens. It may be necessary to provide additional water to the bog system during seasonal dry periods due to a lack of stormwater runoff.

As with any system, plant species in a bog garden setting have various preferences for moisture and sun. Check listed comments below and research plant needs to optimize growth in the conditions specific to individual bog garden systems.

Bog Garden				
SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Adiantum aleuticum</i> * Western maidenhair fern	Shade/partial shade	1-2 feet		Moist to wet soils; graceful, delicate fern; vivid bright green with black stems; spreads through creeping rhizomes; often called <i>A. pedatum</i> , but this refers to the related East Coast maidenhair fern; also try <i>A. capillaris-veneris</i> (Venus-hair fern)
<i>Andromeda polifolia</i> * Bog rosemary	Sun/partial shade	1-1.5 feet	Spring	Moist to wet soils; low-growing evergreen shrub; white to pink flower clusters; ornamental varieties include 'Blue Ice', 'Grandiflora' and 'Nana'
<i>Blechnum spicant</i> * Deer fern	Shade/partial shade	1-3 feet		Moist to wet soils; has both evergreen and deciduous leaves; prefers soils high in organic material; is sensitive to frost
<i>Carex</i> spp. Sedges	Sun/shade	varies		A number sedge choices are great options for a bog garden setting; two are listed in Zone 1 of this appendix, but there are many alternative species to investigate, including <i>Carex mertensii</i> * (Mertens' sedge) and <i>C. lyngbyei</i> * (Lyngby's sedge)
<i>Eleocharis palustris</i> * Creeping spike-rush	Sun	To 3.5 feet		Wet soils to shallow water; perennial forming small clumps
<i>Empetrum nigrum</i> * Crowberry	Sun	To 8 inches	Early spring	Dry to wet/boggy soils; low-growing evergreen shrub; small purplish flowers and purplish-black berries
<i>Equisetum hyemale</i> * Scouring-rush	Sun/partial shade	2-5 feet		Moist to wet soils; hollow-stemmed, evergreen perennial; spreads through creeping rhizomes; vigorous and persistent; with high silica content; also <i>E. scirpoides</i> (Dwarf horsetail); use both with caution – <i>Equisetum</i> can be very invasive and difficult to remove once established
<i>Gaultheria ovatifolia</i> * Oregon wintergreen/ Western teaberry	Partial shade	To 1 foot	Late spring - summer	Moist to wet soils; low-growing evergreen shrub; pink or whitish flowers and red berries; also <i>G. humifusa</i> * (Alpine wintergreen)
<i>Glyceria elata</i> * Tall mannagrass	Sun/partial shade	3-4.5 feet		Moist to wet soils; loosely tufted perennial, spreads through creeping rhizomes; also try the taller <i>G. grandis</i> * (Reed mannagrass)

Bog Garden

SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Gunnera manicata</i> Gunnera	Sun/partial shade	4-6 feet/ 4-8 ft. spread		Moist to wet organic soils; prefers humid setting; non-native from Brazil and Columbia needing mulching protection in the winter; also referred to as 'giant rhubarb'; huge rounded leaves; needs plenty of space; also <i>G. tinctoria</i> from Chile
<i>Hakonechloa macra</i> Japanese forest grass	Shade/partial shade	1-3 feet		Prefers moist, rich soil; slowly spreading perennial grass; green leaves turn coppery orange in the fall
<i>Hosta</i> Plantain lily	Shade/partial sun	To 2.5 feet	Summer	Prefer moist, rich soil; many varieties and hybrids available in a various sizes, foliage textures and colors; thin spikes of blue or white flowers; some are tolerant of sun, but most prefer shade
<i>Juncus</i> spp. Rushes	Sun/shade	varies		As with the <i>Carex</i> species, there are a number of native rushes that would work well in a bog garden. Three options are listed in Zone I of this appendix. Others to investigate include <i>Juncus mertensianus</i> * (Mertens' rush) and <i>J. acuminatus</i> * (Tapered rush)
<i>Kalmia occidentalis</i> * Swamp-laurel	Sun	.5-2 feet	Spring - early summer	Also known as <i>K. polifolia</i> , prefers moist soils; low shrub with aromatic leaves; rose-purple flowers; also try <i>K. microphylla</i> * (Western bog-laurel) a mat-forming, evergreen shrublet; generally found in wet subalpine conditions
<i>Ledum groenlandicum</i> * Labrador tea	Shade/partial sun	1.5-4.5 feet	Summer	Moist to boggy soils; evergreen shrub with small white flower clusters; foliage aromatic when crushed
<i>Ligularia dentata</i> Bigleaf ligularia	Shade/partial shade	3-5 feet	Summer	Moist to wet soils; large-leaved, clumping perennial; yellow-orange blooms; not tolerant of high heat or low humidity; try <i>L. dentata</i> cultivars 'Othello' and 'Desdemona'; also <i>L. przewalskii</i> (Shavalski's ligularia) and <i>L. stenoccephala</i> (Narrow-spiked ligularia)
<i>Linnaea borealis</i> * Twinflower	Shade/partial shade	4-6 inches	June - September	Moist or dry soils; evergreen perennial; pink, fragrant, trumpet-like flowers; trailing ground cover; try <i>L. borealis</i> on the less saturated margins of a bog garden; may be difficult to establish
<i>Lobelia cardinalis</i> Cardinal flower	Sun/partial shade	2-4 feet	Summer	Wet to moist, rich soils; clumping perennial; tubular, bright red, inch-long flowers; also try <i>L. siphilitica</i> (Blue lobelia), another perennial with blue flowers
<i>Lysichiton americanum</i> * Skunk cabbage	Shade/partial shade	2-3 feet	March	Prefers wet soils; deciduous perennial; has odor that some consider to be skunky especially when blooming; yellow hooded fleshy flower spike; great leaves dominate
<i>Matteuccia struthiopteris</i> Ostrich fern	Sun/shade	To 6 feet		Moist, rich soils; hardy northern fern; clumping narrowly at base with foliage spreading to 3 feet in width
<i>Mimulus</i> spp. Monkey-flower	Sun/partial shade	1-3 feet	Spring- summer	Wet soils; perennial or annual that reseeds nicely and keeps spreading; many species available including natives, <i>M. guttatus</i> * (Yellow monkey-flower) and <i>M. tilingii</i> * (Mountain monkey-flower); also <i>M. lewisii</i> * with rose-red to pale-pink flowers

Bog Garden				
SPECIES/ COMMON NAME	EXPOSURE	MATURE SIZE	TIME OF BLOOM	COMMENTS
<i>Myrica gale</i> * Sweet gale	Sun/partial shade	To 4 feet		Moist to wet soils; aromatic, deciduous perennial shrub; glossy green leaves; a nitrogen fixing species
<i>Oplopanax horridum</i> Devil's club	Shade/partial sun	3-10 feet		Moist to wet soils; forms extensive clumps; aggressive grower, but huge palmate leaves highly decorative; clusters of small whitish flowers; wand-like stems have sharp spines
<i>Osmunda cinnamomea</i> Cinnamon fern	Sun/partial shade	2-5 feet		Moist to wet soils; large deciduous fern; unfolding 'fiddlehead' fronds are edible
<i>Oxycoccus oxycoccus</i> * Bog cranberry	Sun	4-16 inches		Moist to wet soils, prefers <i>Sphagnum</i> moss mats, peat and acidic conditions; evergreen, low-creeping vine-like shrub; pink to red flowers; red berries; shade intolerant
<i>Polystichum munitum</i> * Sword fern	Shade/partial shade	2-5 feet		Moist soils; large evergreen fern; dark green fronds with dagger shaped leaflets; hardy and easy to grow
<i>Potentilla palustris</i> * Marsh cinquefoil		To 3 feet		Moist to wet soils; perennial with reddish-purple flowers; stems both prostrate and ascending
<i>Ribes divaricatum</i> * Wild gooseberry	Partial shade/shade	1.5-6.5 feet		Prefers wet or moist soils; green or purple flowers and smooth, dark purple berries; a hedge or screen provides good habitat for birds and wildlife; beware prickly spines; also try <i>R. lacustre</i> * (Black gooseberry)
<i>Salix arctica</i> * Arctic willow	Sun/shade	To 2 feet	Spring	Moist soils; deciduous, prostrate or trailing shrub; leaves are dark green on the bottom and lighter on top; brownish to pink flowers; see Zone 1 of this appendix for details on <i>S. purpurea</i> 'Nana'
<i>Trientalis arctica</i> * Northern starflower	Shade/partial shade	To 8 inches		Wet, boggy soils; small perennial; star-shaped white flowers, or with a pink tinge

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